

**REMARKS**

- Claims 1 to 24 and 26 to 42 are currently pending in this application
- Claim 25 was canceled by an earlier response
- Claims 1, 10, 14, 20, 26, and 30 have been amended by this response
- Claim 1 is the pending independent claim

**Rejection of Claims 1-24 and 26-42 under 35 USC 112, first paragraph**

Claims 1 to 24 and 26 to 42 stand rejected under 35 USC 112, first paragraph as allegedly failing to comply with the written description requirement. Applicant respectfully traverses the rejection.

Applicant respectfully submits that contrary to the assertions in the Office Action, amended claim 1 of the present invention does in fact comply with the written description requirement. Amended claim 1 recites, in part, "purging at least one opening within each of said silicon carbide materials using a gas stream during ultrasonication of said silicon carbide materials in the aqueous solution." Applicants respectfully submit that the original disclosure teaches purging during ultrasonication. Namely, page 8, lines 12 to 15 of the specification states, "the nitrogen gas purge continues until the final cleaning operation of the bonded and sintered silicon carbide material is complete." As can be seen in Figure 2, and the accompanying text, the purging begins in step 236, and continues, in the case of a not new fixtured silicon carbide material, to step 242 for

ultrasonication assisted etching, continues in the ultrasonic cleaning in a bath of deionized water in step 214; and then in step 216 the silicon carbide material makes contact with the dilute solution; the silicon carbide is baked in step 218 and then the process terminates at step 220. Thus, Applicant respectfully submits the original disclosure does provide support for purging during ultrasonication. Additionally, contrary to the assertion in the Office Action, Applicant respectfully submits that claim 1 does not indicate that an integrated system adapted for handling a multiplicity of silicon materials is purged or specification. Rather, the "using an integrated system that is adapted for handling a multiplicity of said silicon carbide materials during said cleaning" feature applies to pins, rings and showerheads, as indicated in Figure 2 and on page 4, lines 2 and 10 to 14 of Applicant's specification, while the "purging at least one opening within each of said silicon carbide materials..." feature applies to the showerhead, as indicated in Figure 2 and on page 8, lines 11 to 18 of Applicant's specification. In other words, all the silicon carbide materials handled by the integrated system do not have to be purged.

Accordingly, Applicant respectfully requests the withdrawal of the 35 USC 112, first paragraph rejection.

**Rejection of claim 26 under 35 USC 112, second paragraph**

Claim 26 stands rejected under 35 USC 112, second paragraph for allegedly insufficient antecedent basis. Applicant respectfully traverses the rejection.

Applicant respectfully submits that as claim 1 has been amended to provide for "a nitrogen gas stream," the "said nitrogen gas stream" feature recited in claim 26 has proper antecedent basis. As such, Applicant respectfully submits this rejection is moot and should be withdrawn.

**Rejection of Claims 1, 6-24 and 26-42 under 35 USC 103(a)**

Claims 1, 6-24 and 26-42 stand rejected under 35 USC 103(a) as being allegedly unpatentable over Tan (WO 02/15255 A1) in view of Guldi (US 6,488,037). Applicant respectfully traverses the rejection.

As indicated in the Office Action, Tan is silent to the use of ultrasonication for silicon carbide parts. Applicant respectfully submits that contrary to the assertions in the Office Action, Guldi does not cure the deficiencies of Tan. Namely, Guldi neither discloses nor suggests "purging at least one opening within each of said silicon carbide materials using a gas stream during ultrasonication of said silicon carbide materials in the aqueous solution," as recited in amended claim 1. Rather, Guldi merely describes bubbling an inert gas into the chemical bath, which may be used in combination with ultrasonic transduction to clean wafers. See e.g. Col. 7, lns. 8 to 11 of Guldi. The present invention, on the other hand, describes purging with gas to prevent migration of chemicals to the anodized aluminum base of the wafer-showerhead, for example during ultrasonication. See e.g. page 8, lns. 14 to 16 of Applicant's specification. Applicant respectfully submits that bubbling an inert gas to clean a wafer, as in Guldi, is not the same as "purging at least one opening of each silicon carbide materials using a

gas stream during ultrasonication of said silicon carbide materials in the aqueous solution," as recited in the present invention.

Applicant further respectfully submits that contrary to the assertion in the Office Action, Tan merely describes ultrasonication of ceramic parts ( $\text{Al}_2\text{O}_3$ , SiC and AlN), in particular a dome, rinsing them and **thereafter** purging the parts dry with filtered  $\text{N}_2$ . See e.g. page 23, lns. 23 to 31 of Tan. Nowhere in Tan is there any indication that an opening of a silicon carbide material is purged. Further, even if the silicon carbide ring listed in Tan on page 9, line 8 is considered an opening in a silicon carbide material, the purging occurs **after** the ultrasonication, to **dry** the dome, not during ultrasonication of the silicon carbide part to prevent migration of chemicals as in the present invention.

Therefore, insofar as Tan and Guldi fail to disclose, teach or suggest all the elements, let alone their combination, of claim 1, Tan and Guldi do not render claim 1 obvious. As claims 6-24 and 26-42 depend from and incorporate the features of independent claim 1, it is submitted that the references relied upon similarly fail to disclose, teach or suggest all the features of dependent claims 6-24 and 26-42. Withdrawal of the 103(a) rejection is accordingly respectfully requested.

#### **Rejection of Claims 2-3 under 35 USC 103(a)**

Claims 2-3 stand rejected as being allegedly unpatentable over Tan in view of Guldi and further in view of Applicant's

admitted prior art. Applicant respectfully traverses the rejection.

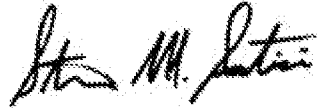
Applicant respectfully submits that for the reasons listed above Tan and Guldi, alone or in combination, neither disclose nor suggest the features of independent claim 1. Applicant further respectfully submits that Applicant's admitted prior art does not cure the deficiencies of Tan and Guldi. Namely, while teaching silicon carbide pins, wafer rings and showerheads, made either by a sintering process or CVD, Applicant's admitted prior art neither discloses nor suggests "purging at least one opening of each silicon carbide materials using a nitrogen gas stream during ultrasonication of said silicon carbide materials in the aqueous solution," as recited in the present invention. As claims 2 and 3 depend from and thereby incorporate the features of independent claim 1, it is respectfully submitted that Tan, Guldi and Applicant's admitted prior art neither disclose nor suggest the features of dependent claims 2 and 3. Accordingly, withdrawal of the 103(a) rejection of claims 2 and 3 is respectfully requested.

## **Conclusion**

Applicants believe all the claims allowable, and that the application is now in condition for allowance. As such, Applicants respectfully request reconsideration and allowance of the same. Applicants do not believe any additional fees

are due regarding this Amendment. However, if any additional fees are required, please charge Deposit Account No. 04-1696.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven M. Santisi". The signature is fluid and cursive, with the first name "Steven" and last name "Santisi" being more legible than the middle initial "M.".

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